

In the claims:

1. A pivoting power transmission unit for driving a rotor, comprising a casing pivoting about a pivot axis on a non-pivoting support, said casing  
5 comprising a lower casing, which encloses at least one stage of gears of the transmission unit, and by which said casing is mounted so as to pivot on said support by two bearings coaxial about said pivot axis and spaced apart from each other therealong, each bearing having a stationary part, integral with said support, and a swivelling part, integral with said lower casing, and mounted so  
10 as to rotate on said corresponding stationary part about said pivot axis, said casing also comprising an upper casing, assembled to the lower casing, and in which a drive shaft, connected in rotation to said stage of gears, is mounted so that it can rotate about an axis of rotation substantially perpendicular to said pivot axis and pivoting with said casing about said pivot axis, said drive shaft  
15 being retained axially by at least one thrust bearing in a part of said upper casing having a generally convergent external shape, which converges towards one end of said drive shaft projecting out of said casing and connected in rotation to said rotor, wherein said upper casing is supported by an arrangement configured to transfer to said support *via* said pivot bearings at  
20 least an axial load experienced by said drive shaft during use.
2. A pivoting power transmission unit according to claim 1, wherein the arrangement comprises a set of at least three suspension struts coupling said pivoting casing to the swivelling parts of the said two pivot bearings, the suspension struts being rigid, substantially rectilinear, inclined to said axis of  
25 rotation so as to converge towards each other and towards said axis of rotation at their ends turned towards said rotor, and distributed about said axis of rotation, with each of said suspension struts being articulated, at a first end to the said convergent part of the upper casing, and, at its second end to one of said swivelling parts of said bearings.
- 30 3. A pivoting power transmission unit according to claim 2, wherein said suspension struts extend outside said pivoting casing, each between an attachment projecting outwards on said convergent part of said upper casing

and an articulated attachment on the corresponding swivelling part of said bearing.

4. A pivoting power transmission unit according to claim 2, wherein said set of suspension struts comprises four struts grouped in two pairs of struts, each pair of which has its two struts articulated to one respectively of the two swivelling parts of said bearings, each swivelling part having two lugs projecting substantially radially relative to the pivot axis and extending either side of a plane passing through the axes of rotation and of pivoting, and on each of said lugs there is articulated one respectively of the two struts of the corresponding pair of struts.

5. A pivoting power transmission unit according to claim 4, wherein articulation points of two suspension struts on the same swivelling part of a bearing are substantially diametrically opposite relative to said pivot axis.

6. A pivoting power transmission unit according to claim 2, wherein each suspension strut is articulated at least so as to swivel about an axis perpendicular to a diametral plane passing through said axis of rotation, at each of its two articulated joints.

7. A pivoting power transmission unit according to claim 2, wherein at least one stage of pinions of the transmission unit is at least partially enclosed by said lower casing and has an external peripheral annular gear, attached inside said lower casing by fasteners, making the upper and lower casings integral with each other.

8. A pivoting power transmission unit according to claim 1, wherein the arrangement comprises a skirt extending from the upper casing at one end opposite to the rotor and outside said lower casing, the skirt having at least two cylindrical arc-shaped portions, coaxial about said pivot axis and each attached to one respectively of the swivelling parts of the bearings, said upper casing being mounted on said lower casing by a swivel coupling allowing it to swivel about a part of said lower casing defining its maximum cross-section, perpendicularly to said axis of rotation, said lower casing being also attached to said swivelling parts of the bearings.

9. A power transmission unit according to claim 8, wherein said swivel coupling comprise a flexible peripheral sealing ring, fitted in an annular groove open radially towards the outside and made in said lower casing, about its part of greatest outside diameter, and said flexible sealing ring is kept in contact  
5 with said upper casing against an annular seating, cylindrical and of circular cross-section, perpendicularly to the said axis of rotation, delimited, radially towards the outside of the flexible sealing ring relative to said axis of rotation, by the inner face of said upper casing.

10. A power transmission unit according to claim 8, wherein said swivel  
10 coupling at the same time substantially provides sealing between said lower casing and upper casing.

11. A power transmission unit according to claim 8, wherein said skirt of said upper casing comprises four coaxial cylindrical arc-shaped portions, forming two pairs of feet curved towards each other, and such that for each  
15 pair, the two corresponding feet are attached to said swivelling part of one respectively of the two bearings, either side of a plane passing through the axes of rotation and pivoting.

12. A power transmission unit according to claim 11, wherein each cylindrical arc-shaped foot is attached to the corresponding swivelling part by a  
20 set of fasteners, distributed along said foot and over a peripheral portion of said swivelling part.

13. A power transmission unit according to claim 12, wherein each cylindrical arc-shaped foot has an attachment face which faces outwardly from said skirt and substantially in a shape of a portion of an annular ring radial  
25 relative to the pivot axis and coaxial about said pivot axis, and by which said foot is attached by said set of fasteners, aligned substantially along the pivot axis, to said corresponding swivelling part.

14. A power transmission unit according to claim 12, wherein each swivelling part comprises a sleeve which is rotatable about the corresponding  
30 stationary part of the corresponding bearing, and supporting an attachment flange, projecting radially outwards relative to the pivot axis, by which said swivelling part, on the one hand, bears against and is attached by a ring of

fasteners to one respectively of two annular rings, delimited in diametrically opposite positions relative to the axis of rotation on said lower casing and radial and coaxial about the pivot axis, to attach said swivelling part to said lower casing, and on the other, bears against and is attached by each of two  
 5 sets of fasteners against each respectively of the feet of one respectively of said pairs of feet of said skirt, to attach said swivelling part to said upper casing, radially outside the fasteners to said lower casing.

15. A power transmission unit according to claim 8, wherein said lower casing encloses an external peripheral annular gear of a stage of pinions of  
 10 said transmission unit, and said annular gear is attached by a set of threaded fasteners to said lower casing, without being attached to said upper casing.

16. A power transmission unit according to claim 1, wherein said convergent part of said upper casing is a substantially truncated cone-shaped section of casing.

15 17. A power transmission unit according to claim 1, wherein said convergent part of said upper casing is a section of casing in the form substantially of a truncated pyramid with a cross-section, perpendicularly to said axis of rotation, which is substantially quadrangular with one of rounded sides and corners with concave faces turned towards said axis of rotation.

20 18. A convertible aircraft comprising at least one tiltable rotor movable from a first position in which the at least one tiltable rotor operates as an aeroplane propeller to a second position in which the at least one tiltable rotor operates as a helicopter main lifting rotor comprising:

a pivoting power transmission unit for driving the at least one tiltable  
 25 rotor, the pivoting power transmission unit comprising:

a casing pivoting about a pivot axis on a non-pivoting support, said casing comprising a lower casing, which encloses at least one stage of gears of the transmission unit, and by which said casing is mounted so as to pivot on said support by two bearings coaxial about said pivot axis and spaced apart  
 30 from each other therealong, each bearing having a stationary part, integral with said support, and a swivelling part, integral with said lower casing, and mounted so as to rotate on said corresponding stationary part about said pivot

axis, said casing also comprising an upper casing, assembled to the lower casing, and in which a drive shaft, connected in rotation to said stage of gears, is mounted so that it can rotate about an axis of rotation substantially perpendicular to said pivot axis and pivoting with said casing about said pivot axis, said drive shaft being retained axially by at least one thrust bearing in a part of said upper casing having a generally convergent external shape, which converges towards one end of said drive shaft projecting out of said casing and connected in rotation to said rotor, wherein said upper casing is supported by an arrangement configured to transfer to said support *via* said pivot bearings at least an axial load experienced by said drive shaft during use.